

1 What is claimed is:

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3 1. A method for evaluating phase signals for determining an angle or a path
4 of a linearly or rotationally displaced component, whereby

5 - a number (N) of measured phase values (α), produced by scanning at
6 least one phase sensor arrangement on the linearly or rotatably displaced
7 component by means of a sensor assigned thereto are evaluated, and
8 whereby

9 - the measured phase values (α) are transformed mathematically into a new
10 range using a linear transformation, **wherein**

11 - once the measured phase values (α) have been transformed with a matrix
12 (\underline{M}_1), a quality level (R) is determined by producing a vector (\underline{T}) followed
13 by the result of a quantization operation (\underline{V}) regarding the vector (\underline{T}),

14 **wherein**

15 - after a transformation has been carried out with a further matrix (\underline{M}_4), a
16 further vector (\underline{X}) is produced from the difference (t) between the vector
17 (\underline{T}) and the result of the quantization operation (\underline{V}), **and wherein**

18 - the minimum value is calculated from the components (x_j) of the other
19 vector (\underline{X}), and the quality level (R) is derived therefrom.

20

21 2. The method as recited in Claim 1,

22 **wherein**

23 - the quality level (R) is determined based on the following relationship:

24
$$R \cdot e_{\max} = \min_{j=1 \dots nx} \left| \left| D_j \pm x_j \cdot C_j \right| \right|,$$

25 - whereby the quantities (C_j) and (D_j) are coefficients that are derivable from
26 the phase signals.

27

28 3. The method as recited in Claim 2,

29 **wherein**

the application of the coefficients (C_j) and (D_j) and the transformation of the vector (\underline{X}) with the further matrix (\underline{M}_4) are combined in one method step.

4. A circuit arrangement for carrying out a method as recited in one of the preceding Claims,

wherein

an electronic circuit is provided with a linear mapping module ($M1$) for processing the phase signals (α) with a matrix (\underline{M}_1), and with a quantization module (V), and **wherein**

with a linear mapping module ($M4$), it is possible to produce the other vector (X) from the difference (t) of the vector (\underline{I}) at the output of the linear mapping module ($M1$) and the result of the quantization operation (V) at the output of the quantization module (V), it being possible to apply the coefficients (C_j) and (D_j) to said other vector in further modules (C , D).